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File 155:MEDLINE(R) 1966-2003/Feb W4
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DIALOG(R)File 155:MEDLINE(R)

09866912 98310436 PMID: 9646468

Bovine platelet adhesion is enhanced by leukotoxin **and sialoglycoprotease isolated from Pasteurella haemolytica A1 cultures.**

Nyarko K A; Coomber B L; Mellors A; **Gentry P A**
Department of Biomedical Sciences, Ontario Veterinary College, University of Guelph, Canada.

Veterinary microbiology (NETHERLANDS) Mar 15 1998, 61 (1-2) p81-91, ISSN 0378-1135 Journal Code: 7705469
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed
Subfile: INDEX MEDICUS

Platelet and fibrin deposits are among characteristic changes observed in lung alveoli of cattle with pasteurellosis induced by Pasteurella haemolytica (biotype A, serotype 1). To determine whether the platelet function could be directly affected by protein products produced by the bacterium, the effects of **leukotoxin** and O-sialoglycoprotease, culture supernatant antigen secreted by Pasteurella haemolytica A1, on bovine platelet activation were examined by evaluating the enhancement of platelet adhesion to a negatively charged surface relative to untreated control samples. The glycoprotease, or the **leukotoxin** , was added to plasma free suspensions of bovine platelets and platelet adhesion assessed by two parameters: (i) the number of 3H-adenine-labeled adherent platelets and (ii) the morphology of unlabeled platelets adhering to the charged surface under scanning electron microscopy (SEM). In the presence of calcium, the glycoprotease produced a dose-dependent increase in adhesion. At a concentration of 4.0 micrograms glycoprotease extract protein per 10(7) platelets, a 2-fold increase in adhesion was observed which was similar to the increase in adhesion induced by 0.10 units of thrombin, a known platelet agonist. Both increased platelet adhesion and platelet aggregation were observed with 0.8 microgram glycoprotease extract protein in the presence of calcium. The response of the bovine platelet suspensions to **leukotoxin** extract protein was dependent on the dosage of the **leukotoxin** . Adhesion was enhanced at dosages of 25 micrograms **leukotoxin** protein per 10(7) platelets and below, while at dosages of 50 micrograms and above adhesion was suppressed. Thus, the two proteins secreted by P. haemolytica may interact directly with bovine platelets to initiate platelet aggregation and fibrin formation in alveolar tissue in pneumonic pasteurellosis.

Tags: Animal; Female; In Vitro; Support, Non-U.S. Gov't
Descriptors: *Blood Platelets--drug effects--DE; *Exotoxins--pharmacology --PD; *Metalloendopeptidases--pharmacology--PD; *Pasteurella haemolytica --growth and development--GD; *Platelet Adhesiveness--drug effects--DE;

Bacterial Toxins--pharmacology--PD; Blood Platelets--physiology--PH; Blood Platelets--ultrastructure--UL; Cattle; Drug Synergism; Exotoxins--isolation and purification--IP; Metalloendopeptidases--isolation and purification--IP ; Microscopy, Electron, Scanning; Pasteurella haemolytica--enzymology--EN; Thrombin--pharmacology--PD

CAS Registry No.: 0 (Bacterial Toxins); 0 (Exotoxins); 0 (leukotoxin)

Enzyme No.: EC 3.4.21.5 (Thrombin); EC 3.4.24 (Metalloendopeptidases) ; EC 3.4.24.57 (O-sialoglycoprotein endopeptidase)

Record Date Created: 19980724

2/9/2

DIALOG(R)File 155:MEDLINE(R)

09688964 98105143 PMID: 9442932

Alterations in bovine platelet function and acute phase proteins induced by Pasteurella haemolytica A1.

Cheryk L A; Hooper-McGrevy K E; **Gentry P A**

Department of Biomedical Sciences, Ontario Veterinary College, University of Guelph.

Canadian journal of veterinary research = Revue canadienne de recherche veterinaire (CANADA) Jan 1998, 62 (1) p1-8, ISSN 0830-9000

Journal Code: 8607793

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Subfile: INDEX MEDICUS

Platelet function was assessed by aggregometry in 10 Holstein calves before and after exposure to Pasteurella haemolytica (biotype A, serotype 1) by intrabronchial challenge. At 24 h after exposure the platelets had become more reactive to stimulation with known platelet agonists such as adenosine diphosphate (ADP) and platelet-activating factor (PAF) and the platelet aggregates that formed were more resistant to disaggregation. The activation of platelets was an early response in the challenged calves as platelet function had returned to pretreatment levels 72 h after exposure to the bacteria while the acute phase reactant proteins, haptoglobin and fibrinogen, were approaching their peak values and alpha 2-macroglobulin levels had also risen significantly ($P < 0.05$) at this time. The plasma levels of these proteins were still elevated and albumin levels were depressed 6 d post-treatment. At post-mortem all calves exhibited pneumonic tissue damage. When P. haemolytica **leukotoxin** was added directly to bovine platelet suspensions both spontaneous aggregation and an increase in the aggregation response to ADP and PAF stimulation were observed. The morphological appearance of the platelet aggregates exhibited the typical pattern for bovine platelets with 2 distinct zones of cells being visible within each aggregate. One zone contained platelets in which the cytoplasmic granules were still evident and the other zone contained irregularly shaped platelets devoid of granular content. In the latter zone, discrete gaps, or pores, were evident in the plasma membrane of numerous platelets. This pore formation is characteristic of **leukotoxin** action and is not observed in ADP or PAF induced aggregates.

Tags: Animal; In Vitro; Male; Support, Non-U.S. Gov't

Descriptors: *Acute-Phase Proteins--biosynthesis--BI; *Cattle Diseases; *Pasteurella Infections--veterinary--VE; *Pasteurella haemolytica; *Platelet Aggregation; Bacterial Toxins--toxicity--TO; Blood Platelets --drug effects--DE; Blood Platelets--pathology--PA; Blood Platelets --ultrastructure--UL; Cattle; Exotoxins--toxicity--TO; Fibrinogen --biosynthesis--BI; Haptoglobins--biosynthesis--BI; Microscopy, Electron; Pasteurella Infections--blood--BL; Pasteurella haemolytica--classification --CL; Platelet Function Tests--methods--MT; Platelet Function Tests --veterinary--VE; Serotyping; Time Factors; alpha-Macroglobulins --biosynthesis--BI

CAS Registry No.: 0 (Acute-Phase Proteins); 0 (Bacterial Toxins); 0 (Exotoxins); 0 (Haptoglobins); 0 (alpha-Macroglobulins); 0

(leukotoxin); 9001-32-5 (Fibrinogen)
Record Date Created: 19980302

2/9/3
DIALOG(R)File 155:MEDLINE(R)

07157664 92092868 PMID: 1753879
Neutralizing monoclonal antibodies to Pasteurella haemolytica leukotoxin **affinity-purify the toxin from crude culture supernatants.**
Gentry M J ; Srikumaran S
Department of Veterinary Science, University of Nebraska, Lincoln 68583-0905.
Microbial pathogenesis (ENGLAND) May 1991, 10 (5) p411-7, ISSN 0882-4010 Journal Code: 8606191
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed
Subfile: INDEX MEDICUS
The **leukotoxin** of Pasteurella haemolytica is a major virulence factor of the organism. It is an unstable protein which has proven very difficult to purify using traditional techniques. Hybridomas secreting monoclonal antibodies (mAbs) to P. haemolytica **leukotoxin** were derived from spleen cells of a mouse immunized with crude culture supernatant. Five hybridomas secreting mAbs specific for the **leukotoxin** were stabilized. Each of the mAbs reacted with a protein of approximately 100 kDa in toxic culture supernatants, and two of them completely neutralized the toxin in vitro. Affinity chromatography of crude culture supernatant on a column prepared with one of the neutralizing mAbs resulted in the isolation of biologically active toxin.
Descriptors: *Chromatography, Affinity--methods--MT; *Exotoxins --isolation and purification--IP; *Immunosuppressive Agents--isolation and purification--IP; *Pasteurella haemolytica--immunology--IM; Antibodies, Monoclonal--immunology--IM; Cytotoxins--immunology--IM; Cytotoxins --isolation and purification--IP; Exotoxins--immunology--IM; Immunosuppressive Agents--immunology--IM; Neutralization Tests; Pasteurella haemolytica --chemistry--CH
CAS Registry No.: 0 (Antibodies, Monoclonal); 0 (Cytotoxins); 0 (Exotoxins); 0 (Immunosuppressive Agents); 0 (leukotoxin)
Record Date Created: 19920130

2/9/4
DIALOG(R)File 155:MEDLINE(R)

05827692 88249496 PMID: 3381490
Comparison of the toxic and antigenic properties of single bovine isolates of Pasteurella haemolytica representing five serotypes and an untypable strain.
Gentry M J ; Confer A W; Holland S G
Department of Veterinary Parasitology, Microbiology and Public Health, Oklahoma State University, Stillwater 74078.
Veterinary microbiology (NETHERLANDS) Apr 1988, 16 (4) p351-67, ISSN 0378-1135 Journal Code: 7705469
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed
Subfile: INDEX MEDICUS
Single strains of 5 different P. haemolytica serotypes (1, 2, 5, 6 and 9) and an untypable strain were compared in an attempt to detect differences which might be related to virulence. All but the untypable strain caused extensive lesions when injected into the lungs of healthy cattle. Each strain was found to be encapsulated and to be toxic in vitro for bovine

leukocytes. Each strain also produced **leukotoxin** in vitro. The toxins varied, however, in total toxic activity and in the kinetics of **leukotoxin** production. Vaccination of cattle with each of the serotype strains elicited antibodies to organism somatic antigens and, to various degrees, the production of **leukotoxin** -neutralizing antibodies which showed no strain specificity in cross-neutralization studies. Although each of the serotype strains appeared to be a potential bovine pathogen, subtle differences were observed which may explain the importance of Serotype 1 strains in bovine pneumonic pasteurellosis.

Tags: Animal; Comparative Study; Female; Male; Support, U.S. Gov't, Non-P.H.S.

Descriptors: *Antibodies, Bacterial--biosynthesis--BI; *Cattle Diseases --microbiology--MI; *Exotoxins--biosynthesis--BI; *Pasteurella--pathogenicity--PY; *Pasteurella Infections--veterinary--VE; Antigens, Bacterial --immunology--IM; Cattle; Cattle Diseases--pathology--PA; Cross Reactions; Leukocytes--microbiology--MI; Lung--pathology--PA; Pasteurella--classification--CL; Pasteurella--immunology--IM; Pasteurella Infections--microbiology --MI; Pasteurella Infections--pathology--PA; Vaccination--veterinary--VE; Virulence

CAS Registry No.: 0 (Antibodies, Bacterial); 0 (Antigens, Bacterial); 0 (Exotoxins); 0 (leukotoxin)

Record Date Created: 19880728

2/9/5

DIALOG(R)File 155:MEDLINE(R)

05406360 87154665 PMID: 3826851

Immunologic response to Pasteurella haemolytica and resistance against experimental bovine pneumonic pasteurellosis, induced by bacterins in oil adjuvants.

Confer A W; Panciera R J; **Gentry M J** ; Fulton R W

American journal of veterinary research (UNITED STATES) Feb 1987, 48 (2) p163-8, ISSN 0002-9645 Journal Code: 0375011

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Subfile: INDEX MEDICUS

Immunogenicity of and protection afforded by Pasteurella haemolytica bacterins were studied in calves. Bacterins contained an aluminum hydroxide in gel (ALH) adjuvant or one of the following oil-in-water adjuvants: Freund's complete adjuvant (FCA), Freund's incomplete adjuvant (FIA), and trehalose dimycolate (TDM). On days 0 and 7, calves were vaccinated with phosphate-buffered saline solution (PBSS), a bacterin, or live P haemolytica. Transthoracic intrapulmonic challenge exposure was done on day 21. In 3 experiments, there were no significant (P greater than 0.05) differences between lung lesions induced in PBSS-or ALH bacterin-vaccinated calves. Both FCA and FIA bacterins significantly (P less than 0.05) enhanced resistance against challenge exposure. Resistance induced by FCA and FIA bacterins was comparable with that induced by vaccination with live P haemolytica. Calves vaccinated with FIA bacterin and challenge-exposed to P haemolytica at a concentration of 4.5 X 10(9) colony-forming units (4.5 times greater than used in the first 3 experiments) resisted challenge exposure similar to calves given live organisms. The TDM bacterin failed to enhance resistance. All bacterins caused a significant increase (P less than 0.05) in serum antibody to P haemolytica somatic antigens, as measured by a quantitative fluorometric immunoassay. Pasteurella haemolytica **leukotoxin** neutralizing antibody titers did not increase significantly (P greater than 0.05) in sera after vaccination with any bacterin. Vaccination with FCA and FIA bacterins resulted in a significant increase (P less than 0.001) in serum antibody to a carbohydrate-protein subunit of P haemolytica, as measured by an enzyme-linked immunosorbent assay.(ABSTRACT TRUNCATED AT 250 WORDS)

Tags: Animal; Female; Male; Support, U.S. Gov't, Non-P.H.S.

Descriptors: *Antibodies, Bacterial--immunology--IM; *Bacterial Vaccines

--immunology--IM; *Cattle Diseases--prevention and control--PC; *Pasteurella--immunology--IM; *Pasteurella Infections--veterinary--VE; *Pneumonia--veterinary--VE; Adjuvants, Immunologic; Cattle; Cattle Diseases --immunology--IM; Cattle Diseases--microbiology--MI; Pasteurella Infections--prevention and control--PC; Pneumonia--microbiology--MI; Pneumonia--prevention and control--PC
CAS Registry No.: 0 (Adjuvants, Immunologic); 0 (Antibodies, Bacterial); 0 (Bacterial Vaccines)
Record Date Created: 19870417

2/9/6
DIALOG(R)File 155:MEDLINE(R)

05330850 87083822 PMID: 3793866
Effect of repeated in vitro transfer of Pasteurella haemolytica A1 on encapsulation, leukotoxin **production, and virulence.**
Gentry M J ; Confer A W; Craven R C
Journal of clinical microbiology (UNITED STATES) Jan 1987, 25 (1) p142-5, ISSN 0095-1137 Journal Code: 7505564
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed
Subfile: INDEX MEDICUS
Pasteurella haemolytica serotype 1 was transferred daily for 128 serial passages on both unsupplemented brain heart infusion agar and the same basal medium supplemented with bovine blood, horse serum, and yeast extract. Repeatedly transferred cultures were shown to retain the ability to produce both capsular material and **leukotoxin** . Furthermore, intact organisms were found to be as toxic in vitro for bovine leukocytes and as virulent for mice as unpassaged cultures. These results indicate that the precaution of using only freshly isolated cultures in the study of this organism may not be necessary.
Tags: Animal; Comparative Study; Male; Support, U.S. Gov't, Non-P.H.S.
Descriptors: *Exotoxins--biosynthesis--BI; *Pasteurella--pathogenicity --PY; Cattle; Culture Media; Leukocytes--microbiology--MI; Mice; Pasteurella--metabolism--ME; Pasteurella--physiology--PH; Virulence
CAS Registry No.: 0 (Culture Media); 0 (Exotoxins); 0 (leukotoxin)
Record Date Created: 19870219

2/9/7
DIALOG(R)File 155:MEDLINE(R)

05295541 87047073 PMID: 3096174
Chromatographic separation and characterization of Pasteurella haemolytica cytotoxin.
Mosier D A; Lessley B A; Confer A W; Antone S M; **Gentry M J**
American journal of veterinary research (UNITED STATES) Oct 1986, 47 (10) p2233-41, ISSN 0002-9645 Journal Code: 0375011
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed
Subfile: INDEX MEDICUS
Biochemical and immunologic properties of the cytotoxin (**leukotoxin**) produced by Pasteurella haemolytica were examined. Crude, bacteria-free supernatants from logarithmic phase P haemolytica were fractionated, using a series of column chromatographic techniques. Sequential anion exchange chromatography, gel-filtration chromatography, and chromatofocusing resulted in a cytotoxic substance (cytotoxin-C) of approximately 160 kilodaltons (kD), as determined by use of gel-filtration chromatography. Polyacrylamide-gel electrophoresis of cytotoxin-C yielded 3 protein bands with relative mobilities of 0.37, 0.42, and 0.63. On the basis of

immunoblotting with a cytotoxin-neutralizing bovine immunoglobulin for antigen detection, the 2 low-mobility bands shared a strong region of immunogenicity. Using sodium dodecyl sulfate-polyacrylamide gel electrophoresis, principal protein constituents of cytotoxin-C were found at 160, 66, 57, and 23 kD. Using immunoblotting with cytotoxin-neutralizing immunoglobulin, strong, distinct reactions with the 66- and 57-kD bands were detected. Immunization of rabbits and mice with cytotoxin-C resulted in sera that reacted strongly with cytotoxin-C in enzyme-linked immunosorbent assays and immunodiffusion assays. The major immunogenic proteins also were detected by use of immunoblotting with anticytotoxin-C sera from rabbits and mice. Postinoculation rabbit sera neutralized crude cytotoxin.

Tags: Animal; Support, U.S. Gov't, Non-P.H.S.

Descriptors: *Bacterial Toxins--analysis--AN; *Cytotoxins--analysis--AN; *Exotoxins--analysis--AN; *Pasteurella--metabolism--ME; Antibodies, Bacterial--biosynthesis--BI; Antigens, Bacterial--immunology--IM; Bacterial Toxins--immunology--IM; Bacterial Toxins--isolation and purification--IP; Cattle; Chromatography, Gel; Chromatography, Ion Exchange; Cytotoxins --immunology--IM; Cytotoxins--isolation and purification--IP; Electrophoresis, Polyacrylamide Gel; Enzyme-Linked Immunosorbent Assay; Exotoxins--immunology--IM; Exotoxins--isolation and purification--IP; Hydrogen-Ion Concentration; Immunodiffusion; Immunologic Techniques; Isoelectric Focusing; Mice; Molecular Weight; Rabbits

CAS Registry No.: 0 (Antibodies, Bacterial); 0 (Antigens, Bacterial); 0 (Bacterial Toxins); 0 (Cytotoxins); 0 (Exotoxins); 0 (leukotoxin)

Record Date Created: 19861209

2/9/8

DIALOG(R)File 155:MEDLINE(R)

05271916 87024037 PMID: 3767098

Cytotoxin (leukotoxin) production by Pasteurella haemolytica: requirement for an iron-containing compound.

Gentry M J ; Confer A W; Weinberg E D; Homer J T

American journal of veterinary research (UNITED STATES) Sep 1986, 47 (9) p1919-23, ISSN 0002-9645 Journal Code: 0375011

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Subfile: INDEX MEDICUS

In studies of Pasteurella haemolytica type 1 cytotoxin, filter-sterilized culture supernatants from organisms grown in RPMI-1640 tissue culture medium generally have been used. Supplementation of the medium with 7% bovine fetal serum was shown to be necessary for maximal cytotoxin production, as measured by percentage of bovine peripheral blood leukocytes that were killed. The serum-induced increase in cytotoxicity could not be explained simply by a greater percentage of increase in the number of viable organisms produced in the enriched medium. There also was no correlation between encapsulation of the organisms and cytotoxin production. Several natural iron-containing proteins including transferrin, lactoferrin, conalbumin, and hemoglobin stimulated cytotoxin production in lieu of bovine fetal serum, leading to the conclusion that one function of serum supplementation may be to increase the medium's iron concentration. A number of additional iron-containing and iron-chelating compounds were tested, with the conclusion that the iron concentration of the growth medium, as well as the presence of a suitable carrier molecule, may be critical for efficient cytotoxin production by P haemolytica.

Tags: Support, U.S. Gov't, Non-P.H.S.

Descriptors: *Cytotoxins--biosynthesis--BI; *Exotoxins--biosynthesis--BI; *Iron--pharmacology--PD; *Pasteurella--metabolism--ME; Pasteurella --drug effects--DE

CAS Registry No.: 0 (Cytotoxins); 0 (Exotoxins); 0 (leukotoxin); 7439-89-6 (Iron)

Record Date Created: 19861104

2/9/9
DIALOG(R)File 155:MEDLINE(R)

05244305 86321335 PMID: 3530067

Immunologic response and resistance to experimentally induced pneumonic pasteurellosis in cattle vaccinated with various dosages of lyophilized Pasteurella haemolytica.

Confer A W; Panciera R J; **Gentry M J** ; Fulton R W

American journal of veterinary research (UNITED STATES) Aug 1986, 47 (8) p1853-7, ISSN 0002-9645 Journal Code: 0375011

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Subfile: INDEX MEDICUS

Pasteurella haemolytica was lyophilized in an enriched soybean polypeptone broth. Lyophilization in this medium resulted in a mean 10-fold loss in P haemolytica viability, as opposed to up to a 10(4)-fold loss in viability when other media were used. Lyophilized P haemolytica was reconstituted and used as a live vaccine in 3 experiments. Calves were challenge exposed by transthoracic injection with virulent P haemolytica. In experiment 1, 2 subcutaneous injections (7-day interval between injections) with 5 ml of recently harvested (1 X 10(9) colony-forming units [CFU]/ml) or lyophilized (1 X 10(8) CFU/ml) P haemolytica significantly (P less than 0.001) enhanced resistance against challenge exposure, compared with resistance in calves given saline solution or sterile medium (control calves) or calves vaccinated with lyophilized organisms at a concentration of 1 X 10(6) CFU/ml. In experiment two, 1, 2, or 5 ml of lyophilized P haemolytica (1 X 10(8) CFU/ml) significantly (P less than 0.05) enhanced resistance, compared with resistance in calves given saline solution (control calves). In experiment three, 1 or 2 injections of lyophilized P haemolytica significantly (P less than 0.01) enhanced resistance against challenge exposure, compared with that of calves given saline solution. The mean lesion score for calves given 1 injection was not significantly higher than the mean lesion score for the group given 2 injections. Vaccination with lyophilized P haemolytica vaccine caused significant (P less than 0.05) increases in serum antibody to P haemolytica somatic antigens, to a carbohydrate-protein subunit of the organism, and to **leukotoxin** .

Tags: Animal; Comparative Study; Support, U.S. Gov't, Non-P.H.S.

Descriptors: *Bacterial Vaccines--administration and dosage--AD; *Cattle Diseases--immunology--IM; *Pasteurella Infections--immunology--IM; *Pasteurella Infections--veterinary--VE; *Pasteurellosis, Pneumonic --immunology--IM; Cattle; Cattle Diseases--prevention and control--PC; Freeze Drying; Immunotherapy; Pasteurellosis, Pneumonic--prevention and control--PC

CAS Registry No.: 0 (Bacterial Vaccines)

Record Date Created: 19861015

2/9/10
DIALOG(R)File 155:MEDLINE(R)

05232678 86304889 PMID: 3745419

Enzyme-linked immunosorbent assay for detection of serum antibodies to Pasteurella haemolytica cytotoxin (leukotoxin) in cattle.

Mosier D A; Confer A W; Hall S M; **Gentry M J** ; Panciera R J

Journal of clinical microbiology (UNITED STATES) Aug 1986, 24 (2) p218-22, ISSN 0095-1137 Journal Code: 7505564

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Subfile: INDEX MEDICUS

An enzyme-linked immunosorbent assay (ELISA) was developed for detection of bovine serum antibodies to the cytotoxin (**leukotoxin**) of Pasteurella haemolytica. A partially purified, cytotoxic, and immunogenic protein obtained from supernatants of logarithmic-phase P. haemolytica was used as the ELISA antigen. Preadsorption of sera with various cytotoxic, somatic, and capsular antigen preparations demonstrated that the assay was specific for anticytotoxin antibodies. ELISA anticytotoxin titers had a strong, significant correlation to cytotoxin-neutralizing-antibody titers. The ELISA, however, was more rapid and allowed for greater numbers of samples to be run than did the neutralization technique. ELISA anticytotoxin titers were high in cattle vaccinated with a live P. haemolytica vaccine, whereas unvaccinated cattle and cattle receiving a P. haemolytica bacterin had low ELISA anticytotoxin titers. A significant positive correlation between ELISA titers and resistance to experimental bovine pneumonic pasteurellosis was present.

Tags: Animal; Comparative Study; Support, U.S. Gov't, Non-P.H.S.

Descriptors: *Antibodies, Bacterial--analysis--AN; *Cattle Diseases --immunology--IM; *Exotoxins--immunology--IM; *Pasteurella--immunology--IM; *Pasteurella Infections--veterinary--VE; Antibody Specificity; Antigens, Bacterial--immunology--IM; Bacterial Vaccines--immunology--IM; Cattle --immunology--IM; Enzyme-Linked Immunosorbent Assay--veterinary--VE; Immunity, Active; Neutralization Tests; Pasteurella Infections--immunology --IM

CAS Registry No.: 0 (Antibodies, Bacterial); 0 (Antigens, Bacterial); 0 (Bacterial Vaccines); 0 (Exotoxins); 0 (leukotoxin)

Record Date Created: 19861021

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